

## DEFINITION OF TERMS AND ACRONYMS

**“27 CCR”** means the State Water Resources Control Board’s regulations, in Division 2 of Title 27 of the California Code of Regulations, applicable to the discharge to land of waste that is not hazardous waste.

**“40 CFR 258”** means the regulations under Part 258 of Title 40 of the Code of Federal Regulations that apply to municipal solid waste landfills.

**“ACM”** means the federal Assessment of Corrective Measures process, under 40 Code of Federal Regulations section 258.56, which applies to any municipal solid waste landfill that has exhibited a measurably significant release over the applicable Water Quality Protection Standard at any well along the point of compliance for any Appendix II constituent. In California, this process is one in which the discharger determines the nature and extent of the release, implements interim corrective action measures, and develops a broad suite of possible measures, including a subset thereof which the discharger will propose for Regional Water Quality Control Board adoption under the Selection of Remedy process. Generally speaking, the federal Assessment of Corrective Measures and Selection of Remedy processes serve the same function, under the federal approach, as the Evaluation Monitoring Program does under the State approach.

**“Affected Medium”** means any natural medium that consists of or contains waters of the state (e.g., ground water, surface water, or the unsaturated zone) that has been affected by a release from a waste management unit.

**“Affected parties”** means all people who own, or reside upon, land outside the facility boundary that is underlain by any portion of the release from the landfill. Under Title 40 of the Code of Federal Regulations section 258.55(g)(1)(iii), the discharger must keep an up-to-date list of all such people and must assure that they are invited to the discussion of proposed corrective action measures, pursuant to Title 40 of the Code of Federal Regulations section 258.56(d).

**“AMP”** means a federal Assessment Monitoring Program, under Title 40 of the Code of Federal Regulations section 258.55, which applies to any municipal solid waste landfill that, under Title 40 of the Code of Federal Regulations section 258.54(c), has exhibited a measurably significant increase over the background value for any Monitoring Parameter. In California, given that a municipal solid waste landfill will have established background as the Concentration Limit for each Monitoring Parameter, the exceedance of the background value for a monitored constituent at any monitoring point also constitutes a violation of the Water Quality Protection Standard, thereby, in most instances, triggering the federal Assessment of Corrective Measures and Selection of Remedy studies. The term also describes the federal program that: 1) is ongoing during the Assessment of Corrective Measures and Selection of Remedy studies and under the Corrective Action Program; and 2) constitutes the federal monitoring program that continues after successful completion of the Corrective Action Program.

**“Appendix I Constituents”** means the suite of 47 volatile organic constituents and 17 metals used as the default monitoring parameter list in 40 CFR §258.

**“Appendix II Constituents”** means the suite of 213 hazardous constituents used as the default constituent of concern list in 40 CFR §258.

**“Background”** means the concentrations or measures of constituents or indicator parameters in water or soil that has not been affected by waste constituents or leachate from the waste management unit being monitored.

**“Background Monitoring Point”** means a well, device, or location specified in the waste discharge requirements at which monitoring for background water quality or background soil quality is conducted.

**“Concentration Limit”** is a part of the Landfill’s Water Standard and means the reference background data set, or reference concentration value, for a given constituent against which one compares current compliance well data to identify, in detection mode, the arrival of the release at a given well and to identify, in tracking mode, if the corrective action measures are bringing the landfill back into compliance with the Water Standard.

**“Constituent of concern (COC)”** is a part of the landfill’s Water Quality Protection Standard and means the list of constituents that could be released from the landfill, including the foreseeable breakdown products of all such constituents. For the ground water medium at an municipal solid waste landfill, this list must include all Appendix II constituents except for those that the discharger can show are not being mobilized in the landfill’s leachate or, for Volatile Organic Compounds only, in its produced landfill gases. A constituent on this list becomes a Monitoring Parameter only after being detected (at trace level or above) and then verified by a well-specific retest in a periodic scan of compliance wells affected by the release.

**“Corrective action measure (CAM)”** means an active or passive process (or installation) that the discharger implements or constructs to constrain a release, to eliminate its effects, or to prevent or minimize the release of additional waste from the landfill. The scope of the term includes ‘interim Corrective Action Measures,’ which is applied before the adoption of the Corrective Action Program, and includes ‘active Corrective Action Measures,’ which involves the induced movement of polluted water within the impacted aquifer (e.g., a pump-and-treat operation).

**“Control Chart”** means a graphical method for evaluating whether a process is or is not in a state of statistical control.

**“Detect,”** when applied to a scan of leachate or ground water, means that the constituent for which the scan is conducted shows up at trace level or higher. For Constituents of Concern and Monitoring Parameters that are rarely detected in background, the term means analyses done using a laboratory analytical method that complies with Title 27 of the California Code of Regulations section 20415(e)(7).

**“Detection mode,”** for a given compliance well / Monitoring Parameter pair, means a state in which one tests for a measurably significant increase, for that Monitoring Parameter at that well, using an appropriate statistical or nonstatistical data analysis method. Once that well / Monitoring Parameter pair exhibits a measurably significant increase (including an initial indication verified by a discrete retest), it is monitored, thereafter, in ‘tracking mode’ until the inception of the proof period, following successful completion of corrective action.

**“Discrete retest”** means a particular means of validating a preliminary indication of a release, for a given compliance well / Monitoring Parameter pair, whereby the discharger applies an approved data analysis method to two new samples for that well / Monitoring Parameter pair. The retest validates the preliminary indication if either or both of the retest samples triggers a measurably significant increase indication. The scope of the retest, at any given compliance well, is limited to only those Monitoring Parameters that gave a preliminary indication at that monitoring point.

**“DMP”** means a Detection Monitoring Program that implements the State Water Resources Control Board’s requirements, under Title 27 of the California Code of Regulations section 20420 and under State Water Resources Control Board Policy No. 93-62, which policy requires the Regional Water Quality Control Board to apply any federal municipal solid waste landfill requirements, under Title 40 of the Code of Federal Regulations section 258.54, that are additional to, or are broader in scope than, the Title 27 California Code of Regulations requirements.

**“EMP”** means an Evaluation Monitoring Program that implements the requirements under Title 27 of the California Code of Regulations section 20425 and under State Water Resources Control Board Policy No. 93-62, which requires the Regional Water Quality Control Board to apply any applicable federal municipal solid waste landfill requirements, under Title 40 of the Code of Federal Regulations section 258.55 through section 258.57, that are additional to, or are broader in scope than, the Title 27 California Code of Regulations requirements. This state program constitutes a stepping stone to a Corrective Action Program, in response to the landfill’s having exhibited a measurably significant increase of a release or to its having exhibited physical evidence of a release [see Title 27 of the California Code of Regulations section 20385(a)(2 and 3)].

**“Existing Footprint”** (as capitalized) means the area of land, at an municipal solid waste landfill, that is covered by waste as of the date that landfill became subject to the federal regulations of Title 40 of the Code of Federal Regulations Part 258, pursuant to section 258.1 of that part.

**“Geographic variation”** means the random change in the mean, or median, concentration of a given Monitoring Parameter between different locations in a given ground water body, in the absence of a release.

**“Indicator Parameters”** in this Order means a suite of parameters that are considered capable of providing reliable indication of a release from the landfill unit.

**“Inter-well comparison”** means a type of statistical or nonstatistical data analysis, applied to a given detection mode compliance well / Monitoring Parameter pair, in which one compares current concentration data, for that Monitoring Parameter and well, with a suite of background data from the appropriate upgradient well(s) to determine if that Monitoring Parameter has produced a measurably significant increase at that well. Generally speaking, the use of upgradient background data tends to produce higher false-positive and false-negative rates than the intra-well comparison approach, but is appropriate in those cases where it is not feasible to validate that a compliance well’s own historical data reflects water quality in the absence of a release.

**“Intra-well comparison”** means a type of statistical or nonstatistical data analysis, applied to a given detection mode compliance well / Monitoring Parameter pair, in which one compares current concentration data, for that Monitoring Parameter, with a suite of background data consisting of selected historical data from that same well to determine if that Monitoring Parameter has produced a measurably significant increase at that well. Typically, the use of a compliance well’s own historical data, for a Monitoring Parameter, provides better statistical power (to identify a real release and to avoid producing false-positive indications) than does the inter-well comparison approach, but only in a case where it is reasonable to assume that the compliance well’s own historical data does not reflect the presence of a release for that Monitoring Parameter.

**“LCRS”** means a functioning Leachate Collection and Removal System (i.e., one that produces leachate).

**“Leachate”** means any liquid formed by the drainage of liquids from waste or by the percolation or flow of liquid through waste.

**“LFG”** means landfill gas, including any Volatile Organic Compounds.

**“M&RP”** means the Monitoring and Reporting Program that is an attachment to the Waste Discharge Requirements (or other order) and that is incorporated by reference by the Waste Discharge Requirements.

**“Matrix effect”** means any increase in the Method Detection Limit or Peak Quantitation Limit for a given constituent as a result of the presence of other constituents, either of natural origin or introduced through a release, that are present in the sample of water or soil-pore gas being analyzed.

**“Measurably significant increase”** means a condition in which an appropriate data analysis method shows an initial indication of a release, for a given detection mode compliance well / Monitoring Parameter pair, that is verified by a discrete retest (for that well and Monitoring Parameter).

**“Method detection limit (MDL)”** means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte’s concentration is greater than zero, as defined in Title 40 of the Code of Federal Regulations section 136, Appendix B.

**“Monitored media”** means those water and/or gas-bearing media (if applicable) that are monitored pursuant to a monitoring and reporting program. The monitored media may include:

- a. groundwater in the uppermost aquifer or in any other portion of the zone of saturation [section 20164 of Title 27 of the California Code of Regulations], in which it would be reasonable to anticipate that waste constituents migrating from the landfill could be detected, and in any perched zones underlying the landfill,
- b. any bodies of surface water that could be measurably affected by a release,
- c. soil-pore liquid beneath and/or adjacent to the landfill, and

- d. soil-pore gas beneath and/or adjacent to the landfill.

**“Monitoring parameter (MPar)”** is a part of the landfill’s Water Quality Protection Standard and means a list consisting of those Constituents of Concern that are present at a detectable level (trace level or above) in ground or surface water affected by the release. This is the subset of the Constituents of Concern that is subject to testing for a measurably significant increase, in detection mode, at all compliance wells. For ground water, at a landfill with a functioning Leachate Collection and Removal System, this suite includes all Appendix II constituents that have been detected (at trace level or above) and verified in leachate and, subsequently, have been detected (at trace level or above) and verified in a Constituents of Concern scan of ground water at compliance wells affected by the release. For ground water, at a landfill without a functioning Leachate Collection and Removal System, this suite includes all Appendix II constituents that have been detected (at trace level or above) and verified in a Constituents of Concern scan of ground water at any compliance well affected by the release.

**“Monitoring point,”** for any given monitored medium (surface water, ground water, or the unsaturated zone), means a location, including any installed access device (e.g., well or lysimeter), that is named in the Monitoring and Reporting Program as a place where the discharger monitors that medium: 1) to detect the arrival of the release front for each Monitoring Parameter that is in detection mode at that location; 2) to detect changes in the concentration of each Monitoring Parameter that is in tracking mode at that location; and 3) in a case where the location that is in tracking mode for most Monitoring Parameters that are involved in the release, to detect the presence, at trace level or above, of any Constituents of Concern that have not previously been detected in that medium (Constituents of Concern newly detected and verified in that medium become Monitoring Parameters for that medium).

**“MSW landfill”** means any landfill that is subject to any portion of the federal regulations under Title 40 of the Code of Federal Regulations Part 258 by virtue of having received municipal solid waste (household waste) at any time and having received any waste after October 9, 1991.

**“Operating record”** means the organized compendium of information about the landfill and facility that the discharger maintains and makes available to the public at a site approved by the Regional Water Quality Control Board and/or the Enforcement Agency and that contains a copy of each document submitted to, or received from, any State or local regulatory agency for purposes of obtaining or updating either the Facility Permit or the Waste Discharge Requirements, demonstrating compliance with the California Environmental Quality Act, or complying (or demonstrating compliance) with any applicable requirement under Title 40 of the Code of Federal Regulations Part 258.

**“Point of compliance (POC)”** is, for the ground water medium, a part of the landfill’s Water Quality Protection Standard and means a conceptual vertical surface that is located, in map view, along the hydraulically downgradient limit of waste placement at the landfill and that extends downward through the uppermost aquifer underlying the Unit. The federal municipal solid waste regulations require one or more ground water monitoring points along this vertical surface to monitor the quality of ground water passing it (see Title 40 of the Code of Federal Regulations section 258.51), whereas the Regional Water Quality Control Board will name other ground water monitoring points (not along this vertical surface) as needed to provide the earliest possible detection and measurement of a release [see Title 27 of the California Code of Regulations section 20415(b)(1)].

**“Practical quantitation limit (PQL)”** means the value established as a target value by the United States Environmental Protection Agency that is the lowest concentration of a substance that can be consistently determined within +/- 20% of the true concentration by 75% of the laboratories tested in a performance evaluation study. Alternatively, if performance data are not available, the Practical Quantitation Limit for carcinogens is the Method Detection Limit multiplied by 5, and for noncarcinogens is the Method Detection Limit multiplied by 10. These estimated Practical Quantitation Limits are listed in Appendix II to Title 40 of the Code of Federal Regulations Part 258. Generally, these are target values that may not reflect the constraints of matrix effects; therefore, the Regional Water Quality Control Board requires the discharger to keep an up-to-date listing of the applicable laboratory-specific Practical Quantitation Limit and Method Detection Limit estimates for each analyte on the Constituent of Concern list.

**“Release”** means the three-dimensional portion of the monitored medium (ground water, surface water, or the

unsaturated zone) comprised of all locations therein that are affected by one or more Monitoring Parameters that have migrated from the landfill to such an extent that a properly constructed monitoring point, at that location, would trigger a measurably significant increase over the applicable concentration limit, using an appropriate data analysis method meeting the requirements of Title 27 of the California Code of Regulations section 20415(e)(9) and a background data set sample size of 16 or more data points.

**“Reporting period”** means the duration separating the submittal of a given type of monitoring report from the time the next iteration of that report is scheduled for submittal.

**“Retest,”** when applied to a scan to detect the presence of an appropriate list of analytes in leachate, landfill gas, or ground water (at an affected monitoring point), means taking a single additional sample from the indicating medium (or, for ground water, the indicating monitoring point) to determine whether the initial detection, for that analyte, is valid. When applied to the six-monthly monitoring effort for a given compliance well / Monitoring Parameter pair in detection mode, see “discrete retest.”

**“RWQCB” or “Regional Board”** means the appropriate California Regional Water Quality Control Board.

**“Sample size,”** for a given compliance well / Monitoring Parameter pair in detection mode, means the number of data points used to represent the variability of the background population or to represent the present compliance status of the Monitoring Parameter at that well, when applying an appropriate data analysis method.

**“Scan”** means a determination as to whether any of a given list of constituents are detectable (at the trace level or above) in the monitored medium (typically leachate, ground water, or landfill gas). The term includes both the initial measurement and, for a newly detected constituent, the results of the single retest sample. To identify a newly detected constituent, the constituent must be detected (at trace level or above) and then verified by being detected in the single sample retest. When applied to leachate or landfill gas, the term indicates a way of determining which Appendix II constituents should be included in the landfill’s the Constituents of Concern list (once detected and verified, a constituent is added permanently to the Constituents of Concern list). When applied to ground water, the term indicates a way of determining which Appendix II constituents should be included in the landfill’s Monitoring Parameter list (once detected and verified at any given compliance well or background well, a constituent is added permanently to the Monitoring Parameter list).

**“SOR”** means a federal Selection of Remedy study, under Title 40 of the Code of Federal Regulations section 258.57, which applies to any municipal solid waste landfill that has exhibited a measurably significant release over the applicable Water Quality Protection Standard at any well along the Point Of Compliance for any Appendix II constituent. In California, this process is one in which the Regional Water Quality Control Board, in the presence of any affected persons and other interested parties, considers all relevant factors and adopts a suite of corrective action measures — developed during the Assessment of Corrective Measures study — which the discharger will apply during the Corrective Action Program to remediate the effects of the release. Generally speaking, the studies serve the same function, under the federal approach, as the Evaluation Monitoring Program does under the State approach.

**“Standard observations”** refers to:

- a. For receiving waters:
  - i. Floating and suspended materials of waste origin: presence or absence, source, and size of affected area;
  - ii. Discoloration and turbidity: description of color, source, and size of affected area;
  - iii. Evidence of odors: presence or absence, characterization, source, and distance of travel from source;
  - iv. Evidence of beneficial use: presence of water-associated wildlife;
  - v. Flow rate; and
  - vi. Weather conditions: wind direction and estimated velocity, total precipitation during the previous five days and on the day of observation.
- b. Along the perimeter of the landfill:

- i. Evidence of liquid leaving or entering the landfill, estimated size of affected area, and flow rate;
  - ii. Evidence of odors: presence or absence, characterization, source, and distance of travel from source; and
  - iii. Evidence of erosion and/or of exposed refuse.
- c. For the landfill:
  - i. Evidence of ponded water at any point on the waste management facility;
  - ii. Evidence of odors: presence or absence, characterization, source, and distance of travel from source;
  - iii. Evidence of erosion and/or of daylighted refuse; and
  - iv. Standard Analysis and Measurements, which refers to:
    - A. Turbidity (only for water samples) in NTU;
    - B. Water elevation to the nearest 1/100th foot above mean sea level (only for groundwater monitoring); and
    - C. Sampling and statistical/non-statistical analysis of the Monitoring Parameters.

**“Supplemental Parameters”** in this Order means a suite of parameters that provide important information regarding groundwater geochemistry but are not expected to show significant variation in groundwater in the event of a landfill release.

**“SW-846”** means the laboratory analytical guidance document published by the United States Environmental Protection Agency.

**“SWRCB”** means the California State Water Resources Control Board.

**“SWRCB Resolution No. 93-62”** means the order the State Water Resources Control Board adopted in 1993 as State Policy For Water Quality Control (has the force of regulation) that applies to all municipal solid waste landfills and requires a composite liner for all portions of the landfill outside of its Existing Footprint, with rare exceptions, and requires the Regional Water Quality Control Board to apply any requirement of Title 40 of the Code of Federal Regulations Part 258 that is missing from, or broader in scope than, the State Water Resources Control Boards’s landfill requirements under Title 27 of the California Code of Regulations.

**“Tracking mode,”** for a given compliance well / Monitoring Parameter pair, means a state in which there has already been a measurably significant increase (for that Monitoring Parameter at that well) such that the focus has changed from detecting the release to tracking it. In this mode, one keeps an up-to-date concentration versus time plot used in the six-monthly report validating the effectiveness of the Corrective Action Measures —required under Title 27 of the California Code of Regulations section 20430(h) —to demonstrate either that current Corrective Action Measures are effectively remediating the release or to identify the need for proposing additional/changed Corrective Action Measures under Title 27 of the California Code of Regulations section 20430(i or j) and Title 40 of the Code of Federal Regulations section 258.58(b). A well / Monitoring Parameter pair in this mode remains in this mode until the inception of the proof period following successful completion of corrective action.

**“Time Schedule Order (TSO)”** is an enforceable schedule of compliance for achieving listed milestones in the cleanup.

**“Time-Versus-Concentration Plot”** provides a graphical method to view changes in concentration levels at a particular monitoring location(s) over time. More than one monitoring location can be compared on the same plot to look for differences between monitoring locations. They can also be used to examine the data for indications of trends.

**“VOC”** means any of the Volatile Organic Compounds that can be identified in a water or leachate sample under United States Environmental Protection Agency Method 8260 (see SW-846). The United States Environmental Protection Agency lists a subset of 47 such constituents in its Appendix I default Monitoring Parameter list (see Appendix I to Title 40 of the Code of Federal Regulations Part 258).

**“Water quality protection standard (Water Standard)”** means the multi-part system by which the discharger determines the compliance status of the landfill, with respect to the release of waste constituents. For each monitored medium, the term includes: the Constituent of Concern list and the Monitoring Parameter list (i.e., the subset of Constituents of Concern that are detectable in the that medium); the concentration limit for each Monitoring Parameter at each monitoring point; the monitoring points (for the ground water medium, these are the compliance wells); and, for the ground water medium, the point of compliance. A violation of this standard occurs whenever a Constituent of Concern that is detectable in that medium (i.e., an Monitoring Parameter) produces a measurably significant increase over its applicable concentration limit at any monitoring point, as indicated by an appropriate statistical or nonstatistical data analysis method meeting the requirements of Title 27 of the California Code of Regulations section 20415(e)(9). Such a violation triggers a change from detection mode to tracking mode for that well / Monitoring Parameter pair.

**“Well / Monitoring Parameter (Well/MPar) pair”** means a given Monitoring Parameter at a given well (typically a compliance well, unless a release is detected at a background well). The discharger tracks compliance with the Water Quality Protection Standard for each such pair; therefore, the minimum number of such pairs for the ground water medium is equal to the number of compliance wells times the number of Monitoring Parameters. At any given time, such a well and constituent combination will be either in detection mode or in tracking mode.

**“WDRs”** means Waste Discharge Requirements.